CLAIMS

What is claimed is:

1. A method of executing a sequence of instructions comprising:

determining a predicted predicate value for a predicate;

and

conditionally executing a predicated instruction depending on the predicted predicate value.

2. The method of claim 1, further comprising:

executing a COMPARE instruction to determine an actual predicate value for the predicate;

comparing the actual predicate value to the predicted predicate value; and

flushing a pipeline if the predicted predicate value and the actual predicate value are unequal.

3. The method of claim 2, further comprising executing the predicated instruction after flushing the pipeline.

4. The method of claim 2, wherein flushing the pipeline consists of flushing only a backend portion of the pipeline.

5. The method of claim 2, further comprising updating historical information using the actual predicate value corresponding to the predicate in a predicate table.

6. The method of claim 1, further comprising storing the predicted predicate value in a file after determining the predicted predicate value and before conditionally executing the predicated instruction.

7. The method of claim 1, wherein determining the predicted predicate value includes calculating the predicted predicate value using historical information corresponding to the predicate.

8. The method of claim 6, wherein determining the predicted predicate value includes reading the historical information corresponding to the predicate in a predicate table.

9. The method of claim 1, wherein conditionally executing the predicated instruction includes executing the predicated instruction if the predicted predicate value is true.

10. The method of claim 1, wherein conditionally executing the predicated instruction includes treating the predicated instruction like a no-op if the predicted predicate value is false.

11. A processor comprising:

a predicate table; and

a predicate prediction calculator having an input coupled to an output of the predicate table.

12. The processor of claim 11, further comprising a speculative predicate register file having an input coupled to an output of the calculator.

13. The processor of claim 12, further comprising a pipeline having a predicted predicate value input coupled to an output of the file and an actual predicate value output coupled to an input of the predicate table.

14. The processor of claim 13, further comprising an XOR gate having a first input coupled to the actual predicate value output of the pipeline, a second input coupled to an output of the file, and an output coupled to a flush input of the pipeline.

15. A processor comprising:

a predicate table to store historical information corresponding to a predicate; and

a pipeline coupled to the table, the pipeline to receive a predicted predicate value calculated from the historical information, and to

conditionally execute a predicated instruction depending on the predicted predicate value.

16. The processor of claim 15, further comprising a predicate prediction calculator to calculate the predicted predicate value.

17. The processor of claim 15, further comprising a speculative predicate register file to store the predicted predicate value.

18. The processor of claim 15, wherein the pipeline includes an actual predicate value output coupled to the predicate table to provide an actual predicate value to the predicate table.

19. The processor of claim 18, wherein the pipeline includes a flush input to receive a flush signal if the predicted predicate value and the actual predicate value are unequal.

20. The processor of claim 15, wherein the predicate table is to further store historical information corresponding to a plurality of predicates.